Children's Hospital of Philadelphia
Sports Medicine & Performance Center

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Arthroscopic Meniscectomy/Chondral Debridement Protocol
Revised 2023

*****Please refer to written prescription for any special instructions for each case*****

The following protocol utilizes a blend of both post-operative timeframes and functional criteria as the determinants for advancement. It is recognized that many athletes will feel pain-free relatively early in their rehabilitation and want to advance to higher level activities as a result. It is important to respect the biological healing and adaptation component of recovery. Overall, this protocol suggests a gradual return to sport activities beginning at 10-12 weeks if all other criteria are also met.

WEEKS 0 to 2: (Initial PT evaluation to be scheduled within 2 weeks of surgery date)

Goals:

- Minimize pain and effusion
- Weight-bearing: TTWB
  - Gradually wean/discontinue crutches once permitted by surgeon to begin WBAT status
- Brace use: locked in full extension at all times, including ambulation and sleep, until permitted to progress by surgeon (typically after 1 week post-op visit)
  - Discontinue brace under guidance of surgeon/physical therapist with the following criteria met:
    - Knee flexion ROM ≥ 100°
    - Perform three single-leg squats to 30° on involved side with proper frontal plane control
- Range of motion:
  - Achieve/maintain full knee extension
  - Gradually advance knee flexion as tolerated
- Restore and progress quadriceps activation and strength
- Begin to reestablish normal gait pattern

Interventions:

- Effusion management (elevation, cryotherapy, compression, ankle pumps)
- Gait training
- ROM/Flexibility:
  - Knee extension: passive extension with heel prop, prone dangle and hamstring/calf stretches
  - Knee flexion: heel slides, wall slides, seated active assisted knee flexion, stationary bike
- Strength:
  - Quad sets
  - NMES/FES for quadriceps activation:
    - Suggested settings: 20-50 sec OFF, 10 sec ON, 2 sec RAMP, 10-15 mins total, 75 Hz pulse rate, 400 μsec pulse width, symmetrical waveform
    - Achieve an amplitude (in mA) for strong muscle contraction
  - SLR x4 (flexion, adduction, abduction, extension)
  - Gradually progress opened chain quadriceps/hamstring strengthening as tolerated
  - Bridging, mini squat, calf raises, band walks
- Home exercise program

WEEKS 2 to 6:

Goals:

- Normalize gait pattern
- Restore full, pain-free knee ROM
- Progress lower extremity strength, neuromuscular control, proprioception/balance and muscular endurance exercises
- Increase low impact cardiovascular conditioning

Interventions (in addition to those listed in previous weeks)**:**

- ROM/flexibility exercises as necessary until goals have been met
- Cardiovascular conditioning (bike, elliptical trainer, stair master, walking on treadmill - no running until permitted by surgeon)
- Weight machine/resistive exercises (bilateral → unilateral leg press, wall sit, knee extension, hamstring curl)
- Functional strengthening (bilateral → unilateral squats/bridges/heel-raises, lunges (forward/lateral), lateral step-downs, step ups, single-leg RDL, core strengthening)
- Balance/proprioception (progression of surfaces, dynamic movements, distractions and visual input)

CRITERIA TO ADVANCE – 6 week assessment

- **Surgeon clearance**
- **At least 90% ROM compared to uninvolved side (At least 0° extension)**
- **Minimal to no effusion**
- **Isokinetic strength testing:** Quadriceps and hamstring peak torque and total work ≤ 25% deficit at 180°/sec (or isometric testing with hand-held dynamometer, if isokinetic testing unavailable)
- **Lateral step-down test (Set step height to achieve ~60° knee flexion):** ≤ 3/6 errors
- **Y balance test (anterior reach only):** ≤ 4 cm difference as compared to uninvolved limb

WEEKS 6 to 10:

Goals:

- Initiate Return to Running Program
- Initiate jumping (double-leg to single-leg)
- Gradually advance with sport specific cutting/agility activities

Interventions (in addition to those listed in previous weeks):

- Progress strength, proprioception/balance and cardiovascular endurance to meet sport specific demands
- Running progression
    - Start with a level surface
    - Focus on a pain free and symmetrical gait pattern
- Plyometrics
    - Begin with double-leg jumps, focusing on soft/symmetrical landings
    - Progress double-leg jumps (height/distance, multiple jumps in same direction, varying surfaces, hopping over/onto objects)
    - Advance to single-leg jumps once patient demonstrates good and symmetrical neuromuscular control with all double-leg jumping and single-leg squats (progress to multi directional when appropriate)
    - Complete functional hop testing after 8 weeks post-op, once patient is able to demonstrate single-leg jumps with good tolerance and neuromuscular control
    - Progress to cutting/agility and sport specific training. Sports specific training to be completed under guidance of PT until cleared to return to team sports (see criteria below)

CRITERIA TO ADVANCE – 10-12 week assessment (*repeat strength and lateral step-down assessments if below goals have not been met during 6 week assessment*)

- **Surgeon clearance**
- **Full knee ROM**
- **No pain or swelling in the involved knee**
- **Isokinetic strength testing –** Quadriceps and hamstring peak torque and total work ≤ 10% deficit at 180°/sec (or isometric testing with hand-held dynamometer, if isokinetic testing unavailable)
- **Lateral step-down test (Set step height to achieve ~60° knee flexion):** ≤ 1/6 errors
- **Y balance test (all directions):**
  - Composite score ≥ 90%
  - < 4 cm difference for anterior reach, < 6 cm difference for posteromedial and posterolateral reach as compared to uninvolved limb
- **Functional hop testing battery:** ≥ 90% limb symmetry, pain free and good neuromuscular control
  - Single hop for distance
  - Triple hop for distance
  - Crossover triple hop for distance
  - Timed 6 meter hop
  - Unilateral vertical jump for height
- **Drop vertical jump using Landing Error Scoring System (LESS):** < 2 errors
- **Tuck jump:** <6 errors (if patient age and skill level appropriate)

Once return to sport criteria are met, the patient will be advised to follow a specific and gradual return to sport progression program which will be provided by surgeon or physical therapist.

WEEKS 10+:

Goals:

- Prepare athlete for return to sport progression
- Promote sport specific fitness (advance strengthening, neuromuscular control and conditioning exercises as indicated)

Interventions (in addition to those listed in previous weeks):

- Final home exercise program and injury prevention education
- Once return to sport criteria are met, the patient will be advised to follow a specific and gradual return to sport progression program which will be provided by surgeon or physical therapist.
  - If all criteria are not met, surgeon/physical therapist will make recommendations for retesting on an individual basis.

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This protocol is designed to be administered by a licensed physical therapist and/or certified athletic trainer. Please do not hesitate to contact our office should you have any questions concerning the rehabilitation process.